

U.G. 3rd Semester Examination-2024**ZOOLOGY****[MAJOR]****Course Code : ZOO-MJ-T-301****(Ecology and Wildlife Biology)****[NEP-2020]****Full Marks : 40****Time : 2½ Hours***The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any five questions of the following:

 $2 \times 5 = 10$

- a) What is ecotone?
- b) What is pyramid of biomass in context of an ecosystem?
- c) What is the importance of life table study?
- d) Do you consider 'Zoological garden' as conservation method? If yes, what type?
- e) What factor is included to change an exponential growth curve to a logistic growth curve?
- f) Name two hotspots in India.

[Turn Over]

g) What is meant by Primary Productivity of an Ecosystem?

h) Define Ecological Efficiency.

2. Answer any two questions of the following:

5×2=10

a) What is meant by Ecophene and Ecotype? Compare the role of Grazer and Decomposer in an Ecosystem. 2+3

b) The human survivorship curve is highly convex. – Explain. What is Carrying capacity? 3+2

c) Distinguish between *r*-selected and *k*-selected species. Distinguish between 'density dependent' and 'density independent' factors of population regulation. 2+3

d) Elaborate the concept of competitive exclusion principle with an example. 5

3. Answer any two questions of the following:

10×2=20

a) What is 'niche'? How does it differ from 'habitat'? How is Gause's principle related to niche of a population? Give example. 2+2+3+3

b) Write short notes on any two: 5+5

i) Remote sensing and GIS in wildlife status estimation

ii) Management strategies and challenges for tiger conservation

iii) Linear and Y-shaped food chains

iv) Lotka-Volterra equation for competition

c) Compare between National parks. Wildlife sanctuaries and Biosphere reserves with examples. Write the drawbacks of Pug mark census method of tiger on Indian context. Mention the chapters and sections in the Wild Life (Protection) Act, 1972 where Sanctuaries or National Parks are declared by Central Government and National Tiger Conservation Authority being described. Distinguish between *in-situ* and *ex-situ* conservation. Name two tiger reserves in West Bengal. 3+2+2+2+1

d) Explain the Liebig's Law of minimum with suitable example and explain photoperiod as regulatory factor in the environment. What is biotic potential? Distinguish between specific mortality and ecological mortality. What is Umbrella Species? What do you mean by 'Eltonian Pyramid'? 4+2+2+1+1